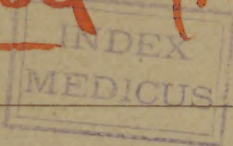


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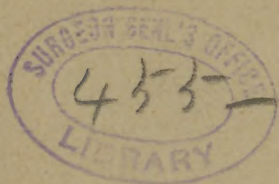
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BY  
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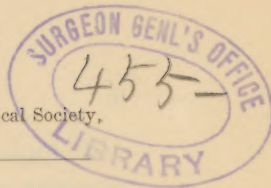
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## ATRESIÆ OF THE GENITAL TRACT.

BY FLORIAN KRUG, M.D.,

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of Obstetricians and Gynecologists; Fellow of the Academy of Medicine;*

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THE etiology of atresiæ,<sup>1</sup> as well as that of other congenital anomalies of the female genital tract, has ceased to be a puzzle, since we have learned that they are not due to a freak of Nature, but are the result of arrest of development at certain phases of embryonic life.

However, it is not intended in the following to enter upon these interesting questions involved, but simply to offer a few practical points, relative to the surgical treatment of atresiæ, which have suggested themselves to me while dealing with a number of such cases in private as well as in hospital and dispensary practice. While there is nowadays unanimity of opinion as regards etiological facts, there still exists a great deal of confusion in regard to the proper way of treating atresia, and I may therefore be pardoned for adding my limited experience.

In the text-books and treatises on this subject, the different varieties of atresia are usually grouped according to their etiology and the location of the occlusion. From a practical standpoint I consider it better to divide them into two large groups:

<sup>1</sup> The name "gynatresia," covering all kinds of occlusions found in the female genital tract, appears to be very appropriate and deserves general adoption.



1. Cases of atresia or absence of the vagina, where *no* functioning sexual organs are found behind the occlusion, therefore not accompanied by retention of menstrual secretion.

2. Cases where the sexual organs are sufficiently developed to produce the catamenial secretions, which, being prevented from finding their natural outlet, must stagnate and lead to distention of the secreting cavities, thus causing the formation of blood cysts, called hæmatocolpos, hæmatometra, hæmatosalpinx, according to their seat.

This latter group may be subdivided, as atresia may occur in the double as well as in the single genital tract.

The reason for this somewhat arbitrary classification will be readily understood, as it will be conceded, that the cases mentioned in the first category will seldom, if ever, require surgical treatment, while those of the second class will invariably cause grave symptoms, necessitating the surgeon's help.

Although atresia of the vagina is a rare occurrence, I have been fortunate in seeing a comparatively large number of cases during the last few years. Three of them were associated with retention of the secretions and were promptly operated upon. One of these occurred in a patient with double vagina and uterus. The left side was patent and menstruated regularly; the right side was occluded and had developed into a large unilateral hæmatocolpos and hæmatometra. Eight cases of the first group, viz., atresia with rudimentary uterus, were not subjected to surgical treatment.

It is true that a few cases have been described, where in absence of the vagina, an artificial opening was made and that this was apparently followed by development of the formerly rudimentary uterus and subsequent menstruation. Still I agree with the majority of writers, that surgical interference is not warranted in cases of defect of the vagina, where, with the aid of careful bimanual palpation under ether, the sexual organs are found missing or in such a rudimentary state of development that the establishment of normal functions seems beyond possibility. If the patient be single, she should be



made acquainted with her condition and marriage forbidden. In case the condition has been discovered after the patient's marriage, the state of affairs may be a precarious one for the interested parties; still, I hold that it is not the surgeon's legitimate task to attempt to establish an artificial cul-de-sac in lieu of the natural sexual canal. My reasons are the following:

1. The attempt to effect an artificial opening in absence of the vagina is fraught with a certain amount of danger, owing to the close proximity of rectum and bladder. In spite of all proper precautions—catheter in bladder, finger or bougie in rectum—these organs, or even the ureters and peritoneum, can easily be injured. Injuries to these organs are much more liable to result in these cases than where a blood-cyst has been formed, which serves as a guide in which direction the incision has to be made.

2. Even in case of an apparent, immediate success of the operation, disappointment is bound to follow. The newly made vagina will quickly close up again through cicatricial contraction, even if dilatation is kept up for a length of time. Three of the cases which came under my observation had previously been operated upon by others. Hardly a trace of these futile attempts could be discovered.

3. Furthermore, there is an ethical point involved in this question worthy of our consideration. Are we justified in submitting a patient to any surgical risk, however small, for the sole object of establishing an artificial receptacle for the husband's penis in order to gratify his copulative desire in the presence of absolute impossibility of conception and parturition?

In view of these reasons, combined with the experience gained from the total failure of others, I have refused operative interference in every instance, and I have not yet had occasion to change my mind on this subject. All my cases were submitted to a careful bimanual exploration under narcosis, which generally revealed the presence of a transverse



band in the pelvis, with a small, flat body, never larger than an almond, in the centre. I could not reconcile my mind that this body could be reached without danger of injuring adjacent organs, and it furthermore seemed to me more than improbable that this little body would develop into a state in which it could discharge its normal functions, for no other reason than the fact that an incision had been carried up to it.

The histories of these cases being similar, I shall omit them and only briefly relate one case, which was of special interest on account of a rare lesion :

A governess, twenty-three years of age, consulted me in 1885. She had been previously told by a gynecologist in Germany that she ought not to marry. She now was engaged, and wanted my opinion. She was a healthy looking girl, with perfectly female habitus, but her pudenda were scarcely developed. Further examination revealed total absence of the vagina; between the labia a spot covered with mucous membrane, which on pressure could be pushed back, thus forming a short cul-de-sac of not more than one-half inch in depth. Careful palpation of the pelvic contents showed that a small, flat body, the size of a bean, in the centre of a thin transverse band, was the only rudiment of the uterus. I explained her condition to her, and strongly advised her against marriage. About a week later she came back and told me that she had since had sexual intercourse with her intended, and everything was in best order. On examination I was surprised to find a perforation extending from the above-mentioned cul-de-sac to a place in the rectum about two inches above the sphincter. According to her statements, the cohabitation had not been accompanied by pain nor by hemorrhage. There was also no incontinence of the bowel, and she would not be persuaded to have the tear repaired. As the newly married couple went out West, I have not heard from them.

Turning now to the second group, viz., gynatresiæ with retention, there certainly is no other class of surgical cases in regard to which so many antiquated ideas are still in vogue. It seems as if every obsolete opinion of the pre-antiseptic era



based on erroneous conclusions was still finding its way into the text-books, like a hereditary disease.

True enough that Dupuytren, Boyer, Sabatier, Cazeaux, entirely condemned the operation as too dangerous, in spite of the fact that the condition itself is a very dangerous one, which, if left alone, must surely lead to death.

True enough that, since men like Langenbeck, Schuh, Nélaton, Billroth, and others met with fatal results after the opening of atresia with retention, this operation was considered a *noli me tangere*. But it is remarkable that this unwarranted dread of bad results should still exist in modern times, when we have narrowed down our mortality in promiscuous laparotomies and vaginal hysterectomies to from 3 to 5 per cent.

Let us then inquire what those dangers are, whether they are real or visionary, and how they can best be avoided. Summarizing the views held by the different writers up to date, the dangers are mainly the following :

1. Injuries to adjacent organs.
2. Rupture of the tubes, if they also be distended by the retained secretions.

3. Septic infection.

1. The danger of injuring the neighboring organs—bladder, rectum, ureters—cannot be entirely denied, especially if the occlusion be very deep and we therefore be obliged to go through a thick layer of tissue before reaching the blood-cyst. Still, with proper precautions and the necessary manual dexterity, the actual danger is insignificant ; besides, should lesion occur, it would not in itself prove fatal.

2. While, as a rule, very little importance is given to the dangers just mentioned, a great deal has been written about the fatal rupture of the tubes following the opening of the atresia. The majority of fatal results have been attributed to this accident, and the most careful instructions have been given how to avoid it. For my part, I cannot share the fear which has troubled the minds of many operators, and con-



sider it the outcome of wrong deductions from wrong suppositions.

Why should tubes, if distended by retained menstrual secretions, have such an abnormal tendency to rupture after the occluding obstruction has been removed? I will concede that extraordinary rough manipulation might cause the rupture; but direct trauma is certainly no more likely to have this effect in these cases than in any other case of encysted fluid within the peritoneal cavity. The fimbriated ends of the blood-filled tubes must certainly be impervious, or else distention would be impossible. The uterine end of the tube might be patent, but then the fluid must flow out toward the point of least resistance, viz., the newly established opening; the walls must then collapse, and rupture is impossible. Should, however, the uterine end of the distended Fallopian tube be closed, it is not comprehensible why rupture should be more likely to occur *after* instead of *before* evacuating the hæmatometra, when the uterine contractions are most violent. Even allowing that contractions may take place in the tubal walls themselves while they are fixed by peritoneal adhesions, it is beyond my comprehension why this condition should be so preëminently more likely to lead to rupture than in ordinary hæmato-, hydro- or pyosalpinx. From a careful study of the published histories of fatal results ascribed to rupture of distended tubes subsequently to operations for imperforate hymen or atresia of the vagina, I am convinced that they were not due to any direct trauma, but that septic infection from outside was the primary cause leading to an abnormally friable condition of the tubal walls.

3. Taking all this into consideration, I must hold that the much-dreaded danger of fatal rupture of tubal sacs is only imaginary, and that its greatest importance lies in the fact that it is apt to direct our attention from the *only actual* danger, viz., *septic infection*.

As soon as this fact will be generally recognized and our efforts centred on the maintenance of strictest asepsis during



the operation and after-treatment, fatal results from this simple surgical procedure must become a thing of the past.

It was my good fortune that the symptoms of my first case, which I operated in 1888, were of so urgent a nature that they required immediate help. Therefore, I was unable to previously consult the text-books, and simply modelled the plan of my operation according to modern surgical principles, unbiased by views held in the pre-antiseptic period. The absolutely smooth recovery of this case as well as my following two cases proved to me that I had been right in my assumptions.

As detailed histories of my first two cases can be found in the *Medizinische Monatsschrift*, December, 1889, I shall refrain from relating them again, nor shall I add an account of my third case, which was practically the same as Case II.

The technique and principles employed in my operations for atresia with retention are as follows :

The strictest antiseptic precautions are of paramount importance. Without going into details, I should like to mention one point which does not always receive the necessary attention, viz., the proper disinfection of the field of operation. I have often observed that operators would rely upon douching the vagina with some antiseptic fluid for obtaining an aseptic field. This is absolutely insufficient unless the parts have first been subjected to a thorough mechanical cleansing, which I always effect by scrubbing the folds of the vagina with mollin containing 10 per cent. of creolin, by means of a brush.

While the patient is in deep narcosis the atresia is made accessible through the use of retractors. An incision is made with the scalpel, and, if the thickness of the occluding membrane does not exceed one inch, the blood-cyst is at once opened. Where there is a great deal of intervening tissue, it may be advisable to use the finger or blunt end of the scalpel in dividing the remaining septum, while bladder and rectum are carefully watched. At any rate, the opening should be



established without first using a trocar to draw off part of the fluid.

This brings us to the question, whether rapid or gradual evacuation should be employed—a much-ventilated topic. I admit, that anybody who still looks for the rupture of the tubes as the most dangerous factor in those cases, and fears that the change of abdominal pressure is sufficient to bring on this result, is right in being extremely cautious in letting off the retained fluid. Some have gone so far as to allow it to slowly ooze out through a small opening during a full week before they dared to make an incision. Still there is not a single case on record where rupture of the tubes, after rapid evacuation, took place on the operating-table, where it certainly should be supposed to be most likely to occur.

On the contrary, I take this as corroborative evidence in favor of my claim that septic infection from without is always the *primary* cause of the patient's death, and that the infectious changes in the uterine and tubal walls and their peritoneal covering, rendering them abnormally friable, *secondarily* lead to their rupture and general peritonitis.

If we, therefore, maintain perfect asepsis during and after the operation, we will feel perfectly secure in handling those cases according to the principles of modern surgery, and will abandon all methods as obsolete which call for the gradual evacuation and which are solely based on the visionary dangers of tubal rupture. The gradual method certainly involves a great deal of risk, owing to the difficulty in keeping the parts aseptic in the presence of the natural discharges from the bladder and rectum and the constant oozing of a fluid which has the tendency to rapidly become decomposed.

In advocating rapid evacuation, I do not say that the whole fluid should be allowed to gush out at once. It may flow out in a steady stream, which can easily be regulated in the same way as we gradually empty large ovarian cysts in our laparotomies. But the idea of letting it ooze out, drop by



drop, during a period of days ought not to be considered good surgery in 1891.

After the cavity has thus been emptied of its contents, the incision should be enlarged as much as possible, and, whenever feasible, a large-sized piece of the occluding membrane should be excised. The opening must be made as large as possible, as it has a great tendency to shrink afterward on account of cicatricial contraction, and for that reason may possibly necessitate a second operation. Where the intervening layer of tissue is not so thick as to prevent coaptation, the two edges of mucous membrane should be brought together and united by a circular running suture.

This being done, I must consider it an important step to thoroughly wash out the newly opened cavity with a warm Thiersch's solution or sterilized water. The hæmatometra fluid is usually very thick and sticky, and if allowed to adhere to the uterine walls will quickly become decomposed. I found it very convenient to introduce my finger into the cavity while it was being flushed, and to remove the adhering blood-rests by gentle movements. At the same time, one can try and ascertain in a cautious manner whether the uterine ostium of the tube is closed and the tube extended by fluid, or not. The fear of thus causing rupture did then no more enter my mind than when examining any other gynecological case, barring extra-uterine pregnancy.

Having satisfied myself that the cavity is thoroughly emptied of its contents, I pack it with iodoform gauze. This method is preferable to any other of the many recommended for after-treatment, for the following reasons:

1. It insures perfect drainage from the cavity, thus preventing stagnation and decomposition of the secretions.
2. It protects the cavity against infection from without.
3. It keeps the newly established opening patent.

I might also add a fourth point for those still in fear of tubal rupture, namely, that in taking the place of the evacu-



ated fluid it ought to be an effective preventative for this dreaded accident.

The advantages of this method are so evident that I need not go further into details and compare it with other appliances that have been devised, as, for instance, rubber drainage-tubes, glass cones with or without lateral openings, sponge tents, trocar-canula, etc.

The cavity having been packed with gauze, an antiseptic pad is fastened between the thighs by means of a T-bandage, and the patient put to bed. As soon as she recovers from the effects of the anæsthetic, she is placed in a half-sitting position in order to facilitate drainage. The antiseptic pad is changed as often as it becomes soaked. The bowels are moved on the second or third day. On the fourth day the patient is placed in the lithotomy position, the iodoform gauze carefully removed, and, after a thorough irrigation, the cavity again packed with gauze. The dressing is changed every four or five days, while the cavity will be rapidly decreasing in size.

As soon as the uterus has assumed normal size and shape, it is time to determine if the tubes are in a normal condition before the patient is allowed to get up. Should they be found distended by retained blood, they will have to be removed by laparotomy.

One word about the time of operation. We are generally advised to select the time between two menstrual epochs. But if the latter should be irregular, the proper time would be hard to define. Besides, if we should happen to first see the patient during her time of menstruation, when all her symptoms are greatly aggravated, there is no good reason why we should not at once proceed to relieve her severe suffering. I have done so in my first case, and am unable to see any contra-indication for it.







